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Abstract	Reduction of noise has a considerable effect in medical image processing and computer vision analysis. Medical images are affected by noise due to low radiation exposure, physiological sources and electronic hardware noise. This affects diagnosis quality and quantitative measurements. In this paper, optical coherence tomography images are de-noised through wavelet transform, and the wavelet threshold value is further optimised using genetic algorithm (GA). The optimal levels of wavelet decomposition and threshold correction are performed through GA. The efficacy of the proposed method is verified by comparing the results with other reported wavelet- and GA-based methods in terms of Peak-Signal-to-Noise Ratio (PSNR) parameters. The quality of the resulting image is measured through structural similarity index measure (SSIM), correlation of coefficient (COC) and edge preservation index (EPI) parameters. The improvement of the proposed approach in terms of performance parameters PSNR, COC, SSIM and EPI is respectively 2.24%, 7.9%, 17.18% and 6.32% more than the existing GA-based method considering retinal OCT image. The results indicate that the suggested algorithm effectively suppresses the speckle noise of different noise variances, and the de-noised medical image is more suitable for clinical diagnosis.	
Keywords (separated by '-')	Optical Coherence Tomography (OCT) - Genetic Algorithm (GA) - Wavelet transform - Optimization	
Footnote Information		